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STREAM

*Green  
Creek*

# CLASSIFICATION

FOR MISSOURI RIVER AND TRIBUTARIES

EXCLUDING YELLOWSTONE & LITTLE MISSOURI RIVERS & TRIBUTARIES

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Board of Health 5/27/61*

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STREAM CLASSIFICATION  
FOR  
MISSOURI RIVER AND TRIBUTARIES

Progress Report 61-2  
Montana State Board of Health

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## FOREWORD

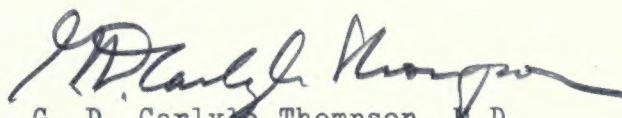
The Missouri River and tributaries included in this report are the last streams in the state to be classified. These classifications were adopted by the Water Pollution Council on May 2, 1961 following a public hearing in Great Falls on December 6, 1960. From a public health standpoint, these classifications adopted by the Water Pollution Council were approved on May 27, 1961 by the State Board of Health. Progress Report 60-1, dated November 29, 1960, a staff report to the Water Pollution Council on a study of the Missouri River and its proposed classification, was the basis for holding the public hearing and the Council meeting in Great Falls on December 6, 1960.

The Yellowstone and Little Missouri River Drainage Areas (tributaries of the Missouri River) were classified by the Water Pollution Council on September 2, 1958, following a hearing held in Billings on June 10, 1958. West of the Continental Divide, the classifications of the Columbia River Drainage Basin streams in Montana were adopted on December 2, 1958. Hearings at Missoula on September 3, 1958 and Kalispell on September 4, 1958 preceded these classifications.

The adopted classifications for the Missouri River Drainage Area differs from the proposed classifications presented at the hearing in Great Falls in that the Big Hole River (Butte water supply), Hyalite and Bozeman Creeks above the City of Bozeman water supply intakes, Ten Mile Creek above the City of Helena water supply intake near Rimini, and McClellan Creek (East Helena water supply) were classified A, C, D, and E. The proposed classifications were B, C, D, and E. Even though these streams may be somewhat turbid for a period during spring run-off, they are clear mountain streams during the major part of the year. The adopted classification is consistent with their present use.

Prickly Pear Creek above the confluence of the City of Helena sewage treatment plant effluent ditch was classified as B, C, D, and E. Below the confluence to Lake Helena the classification is E. The E section of the stream contains no flow except sewage treatment plant effluent during part of the irrigation season. Lake Helena to the Missouri River was classified as C, D, and E. The proposed classification for Prickly Pear Creek was C, D, and E except for some tributaries which were B, C, D, and E.

One item brought out at the classification hearing in Great Falls on December 6, 1960 may need further clarification. The intent of the classification is not to restrict the use of a water taken from a stream by a person, municipality or corporation, but to place restrictions on the wastes that can be returned to the stream to insure that the classification standards are met in accordance with the streams' most beneficial uses.

  
G. D. Carlyle Thompson, M.D.  
Executive Officer  
Montana State Board of Health

June 14, 1961



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MONTANA STATE WATER POLLUTION COUNCIL  
STREAM CLASSIFICATION

FOR  
MISSOURI RIVER AND TRIBUTARIES

(Excluding Yellowstone and Little Missouri Rivers & Tributaries)

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Appendix D

BODY OF WATER <sup>1</sup>					LOCATION	REMARKS	CLASSIFICATION
Order <sup>2</sup>							
Second	Third	Fourth	Fifth	Sixth			
		Beaverhead River and tributaries except Rattlesnake Creek and Ruby River	Rattlesnake Creek and tributaries		From source to Jefferson River		B,C,D,E
					From source to City of Dillon water supply intake	City of Dillon water supply	A,C,D,E
					From City of Dillon water supply intake to Beaverhead River		B,C,D,E
			Ruby River and tributaries except Indian Creek		From source to Beaverhead River		B,C,D,E
				Indian Creek and tributaries	From source to Town of Sheridan water supply intake	Town of Sheridan water supply	A,C,D,E
					From Town of Sheridan water supply intake to Ruby River		B,C,D,E
		Big Hole River and tributaries			From source to confluence with Jefferson River	City of Butte Water Supply	A,C,D,E

<sup>1</sup> Names of streams, lakes and reservoirs taken from USFS map

<sup>2</sup> a first-order stream is one which terminates at the ocean (consequently, we have no 1st-order streams in Mont.) 2nd-order are tributary to 1st, etc.

Adopted by Water Pollution Council May 2, 1961  
Approved by the Montana State Board of Health  
May 27, 1961

Printed May 31, 1961



Missouri River Classification  
Page 2 of 7

BODY OF WATER					LOCATION	REMARKS	CLASSIFICATION
Second	Third	Fourth	Fifth	Sixth			
	Jefferson River and tributaries except Whitetail Creek and Boulder River	Whitetail Creek and tributaries Boulder River and tributaries except Basin Creek	Basin Creek and tributaries		From confluence of Big Hole and Beaverhead Rivers to Missouri River		B, C, D, E
					From source to Jefferson River	Town of Whitehall sewage lagoon under construction	B, C, D, E
					From source to Jefferson River		B, C, D, E
					From source to community of Basin water supply intake	Community of Basin water supply	A, C, D, E
					From community of Basin water supply intake to Boulder River		B, C, D, E
	Madison River and tributaries				From source to Missouri River	Treatment of City of Three Forks sewage planned	B, C, D, E
		West Gallatin River and tributaries			Source to East Gallatin River	Resort and private water supplies - Private sewers	A, C, D, E
		East Gallatin River and tributaries except Bozeman, Bridger and Hyalite Creeks			From source to West Gallatin River	City of Bozeman sewage needs chlorinating. Slaughter house waste needs treatment. Several private sewers enter stream.	B, C, D, E
			Bozeman Creek and tributaries		From source to City of Bozeman water supply intake	City of Bozeman water supply	A, C, D, E
					From City of Bozeman water supply intake to East Gallatin River		B, C, D, E



BODY OF WATER					LOCATION	REMARKS	CLASSIFICATION
Second	Third	Order Fourth	Fifth	Sixth			
			Bridger Creek and tributaries except Lyman Creek	Lyman Creek and tributaries	From source to East Gallatin River		B, C, D, E
			Hyalite Creek and tributaries		From source to Bridger Creek	City of Bozeman water supply	A, C, D, E
					From source to City of Bozeman water supply intake	City of Bozeman water supply	A, C, D, E
					From City of Bozeman water supply intake to East Gallatin River		B, C, D, E
			Gallatin River and tributaries		From confluence of East and West Gallatin Rivers to Missouri River	City of Manhattan sewage lagoon under construction	B, C, D, E
Missouri River mainstem and tributaries					From confluence of Madison, Jefferson and Gallatin Rivers to Canyon Ferry Dam	Need further treatment of community of Trident sewage. City of Helena water supply taken from Canyon Ferry reservoir in part.	B, C, D, E
Missouri River mainstem and tributaries except Prickly Pear Creek, Smith River and Sun River					From Canyon Ferry Dam to Black Eagle Dam	Need treatment of sewage at Town of Cascade. Industrial wastes at Great Falls. City of Great Falls water supply.	B, C, D, E



BODY OF WATER					LOCATION	STAKES	CLASSIFICATION
Second	Third	Fourth	Fifth	Sixth			
	Prickly Pear Creek and tributaries except McClellan, Ten Mile and Seven Mile Creeks				From source to confluence with City of Helena sewage effluent ditch	Wastes from mining operations.	B, C, D, E
					From confluence with City of Helena sewage effluent ditch to Lake Helena	City of Helena sewage treatment plant effluent enters stream. Creek is dry during part of year	E
					Lake Helena to confluence with Missouri River		C, D, E
		McClellan Creek and tributaries			From source to confluence with Prickly Pear Creek	City of East Helena water supply	A, C, D, E
		Ten Mile Creek and tributaries except Seven Mile Creek			From source to City of Helena water supply intake above Rimini	City of Helena water supply	A, C, D, E
					From City of Helena water supply intake above Rimini to Prickly Pear Creek		B, C, D, E
			Seven Mile Creek and tributaries		From source to Ten Mile Creek	Receives Fort Harrison sewage	B, C, D, E
	Smith River and tributaries except Willow Creek				From source to Missouri River	Receives sewage lagoon effluent at City of White Sulphur Springs	B, C, D, E



BODY OF WATER					
Order					
Second	Third	Fourth	Fifth	Sixth	
Missouri River mainstem and tributaries except Belt Creek, Marias River, Judith River, Musselshell River and Milk River	Sun River and tributaries	Willow Creek and tributaries			From source to Smith River
					From source to Missouri River
					From Black Eagle Dam to confluence with Milk River
	Belt Creek and tributaries except O'Brien Creek	O'Brien Creek and tributaries			From source to Missouri River
	Marias River and tributaries except Cut Bank Creek, Two Medicine Creek and Teton River	Cut Bank Creek and tributaries except Flat Iron Creek			From source to Belt Creek
					From source to Missouri River
					From source to Marias River
					Water supply for City of White Sulphur Springs
					Need treatment of meat packing company wastes. City of Fort Benton water supply. Need further treatment of Malmstrom AFB sewage
					Industrial wastes from mines near the communities of Weihart, Hughesville and Monarch
					Water supply for Town of Weihart
					City of Cut Bank water supply

CLASSIFICATION

A,C,D,E

B,C,D,E

B,C,D,E

B,C,D,E

A,C,D,E

B,C,D,E

B,C,D,E

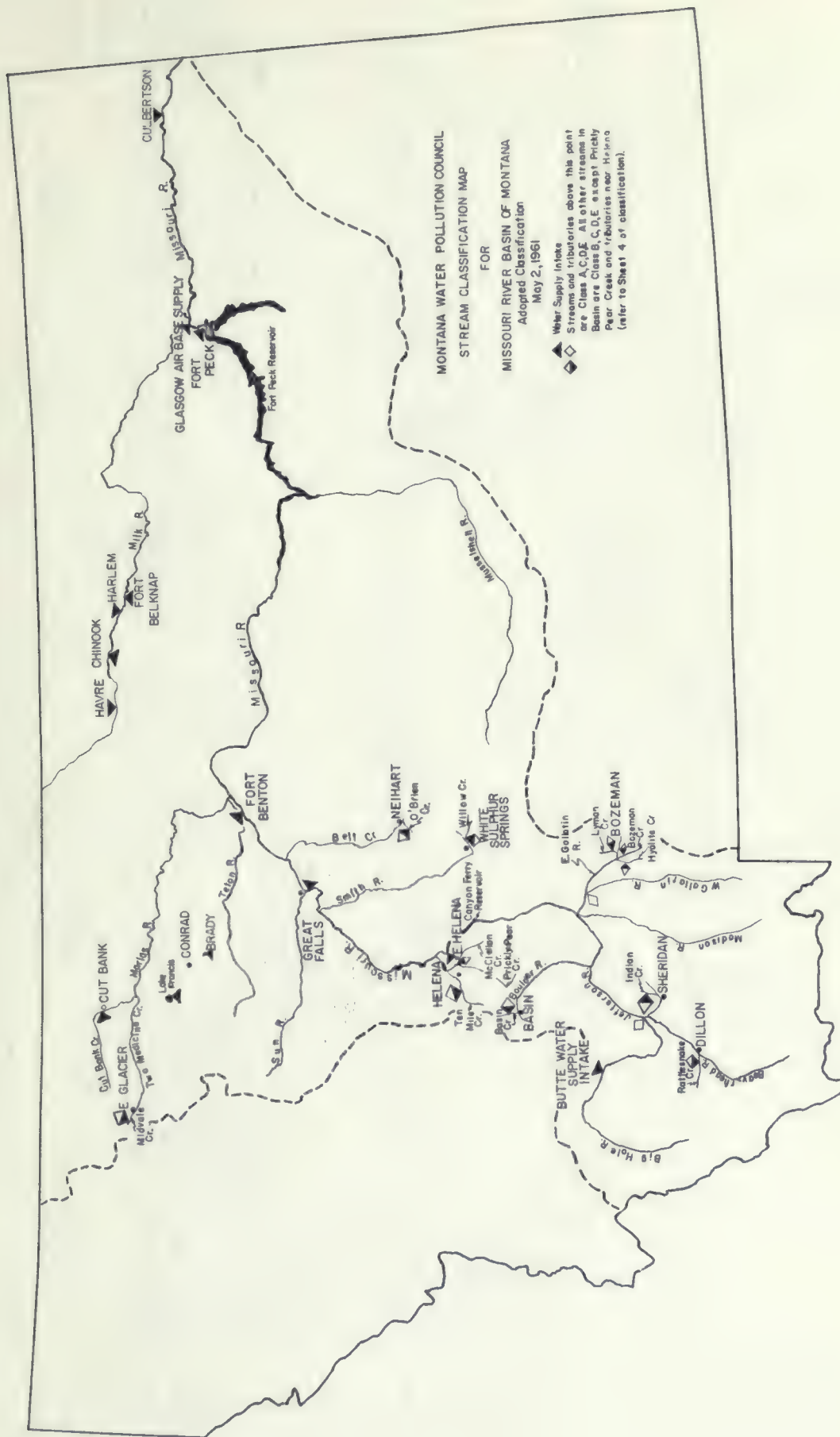


BODY OF WATER					REMARKS	CLASSIFICATION	
Order							
Second	Third	Fourth	Fifth	Sixth	LOCATION		
			Flat Iron Creek and tributaries		From source to Cut Bank Creek	Receives City of Browning partially treated sewage	B, C, D, E
		Two Medicine Creek and tributaries except Midvale Creek			From source to Cut Bank Creek	Receives partially treated sewage from East Glacier	B, C, D, E
			Midvale Creek and tributaries		From source to Two Medicine Creek	Past Glacier water supply	A, C, D, E
		Neeton River and tributaries			From source to Marias River	Receives effluent from City of Choteau sewage lagoon	B, C, D, E
	Judith River and tributaries except Spring Creek				From source to Missouri River		B, C, D, E
		Spring Creek and tributaries			From source to Judith River	City of Lewistown sewage requires additional treatment	B, C, D, E
	Musselshell River and tributaries except McDonald Creek				From source to Missouri River	Water supply for municipalities of Melstone and Roundup. Receives sewage lagoon effluent from municipalities of Harlowton, Roundup and Melstone	B, C, D, E
		McDonald Creek and tributaries			From source to Musselshell River	Need further treatment of City of Winnett sewage	B, C, D, E



BODY OF WATER						
Order						
Second	Third	Fourth	Fifth	Sixth		
	Milk River and tributaries except Beaver Creek				From source to Missouri River Water supply for Cities of Havre, Chinook, Harlem and Fort Belknap. Need further treatment of sewage at Communities of Fort Belknap, Hinsdale and Nashua	B, C, D, E
		Beaver Creek and tributaries			From source to Milk River	B, C, D, E
Missouri River mainstem and tributaries except Redwater River, Poplar River and Big Muddy Creek				From confluence with Milk River to state line	Need further treatment of Town of Culbertson water supply. Need further treatment of sewage at municipalities of Poplar and Bainville	B, C, D, E
	Redwater River and tributaries			From source to Missouri River		B, C, D, E
	Poplar River and tributaries			From source to Missouri River	City of Scooby sewage requires additional treatment	B, C, D, E
	Big Muddy Creek and tributaries			From source to Missouri River	Sewage from Town of Medicine Lake requires additional treatment. Receives effluent from Plentywood sewage lagoon	B, C, D, E





MONTANA WATER POLLUTION COUNCIL  
STREAM CLASSIFICATION MAP

FOR

MISSOURI RIVER BASIN OF MONTANA  
Adopted Classification

May 2, 1961

- ◈ Water Supply Intake
- ◈ Streams and tributaries above this point are Class A,C,D,E. All other streams in Basin are Class B,C,D,E except Prichly Pear Creek and tributaries near Helena (refer to Sheet 4 of classification).



# STREAM CRITERIA FOR WASTE DISCHARGES

WATER QUALITY OBJECTIVES AND MINIMUM TREATMENT REQUIREMENTS FOR MONTANA SURFACE AND UNDERGROUND WATERS

WATER QUALITY WATER USES	ORGANISMS OF THE COLIFORM GROUP	FLOATING, SUSPENDED SETTLABLE SOLIDS AND SLUDGE DEPOSITS	TASTE OR ODOR PRODUCING SUBSTANCES	DISSOLVED OXYGEN	pH	TOXIC, COLORED, OR OTHER DELETERIOUS SUBSTANCES	PHENOLIC COMPOUNDS	OIL	HIGH TEMPERATURE WASTES	MINIMUM TREATMENT REQUIREMENTS FOR DOMESTIC SEWAGE
(A) WATER SUPPLY, DRINKING, CULINARY, AND FOOD PROCESSING. Without treatment other than simple disinfection will meet this require- ment of naturally present impurities.	Most probable number (MPN) coliform bacterial content of a representa- tive number of samples should average less than 50 per 100 ml. in any month.	None attributable to sewage, industrial wastes, or other wastes which, after reasonable dilution and mixture with receiving waters, interfere with the best use of these waters for the purpose indicated.	None attributable to sewage, industrial wastes or other wastes which, after reasonable dilution and mixture, will increase the threshold odor number above eight (8).	Greater than five (5) parts per million, except for underground waters.	Hydrogen ion concentration expressed as pH should be maintained between 6.5 and 8.5	None alone or in combination with other substances or wastes in sufficient amounts or of such nature as to make receiving water unsafe or unsuitable for use indicated (U. S. P. H. S. Std)	Less than five (5) parts per billion	None	Not in sufficient quantities alone or in combination with other wastes to interfere with the use indicated.	Primary treatment and effective disinfection except in special cases as determined by the State Board of Health. Sewage lagoon treat- ment will meet this requirement.
(B) WATER SUPPLY, DRINKING, CULINARY, AND FOOD PROCESSING. With treatment equal to coagulation, sedimenta- tion, filtration, dis- infection, and any addi- tional treatment nec- essary for removing naturally present im- purities	MPN coliform bacterial content of a representa- tive number of samples should average less than 200 per 100 ml. and should not exceed this second limit more than 20 percent of sam- ples examined in any month where associated with domestic sewage.	(Same as for use "A" above).	None attributable to sewage, industrial wastes or other wastes which, after reasonable dilution and mixture, will inter- fere with the best use of these waters for the pur- pose indicated.	Same as for use "A" above.	Same as for use "A" above.	Same as for use "A" above.	Same as for use "A" above.	None detectable	Same as for use "A" above.	Same as for use "A" above.
(C) BATHING, SWIMMING, AND RECREA- TION. Note: When waters are used for recreational purposes such as fish- ing, swimming, and boating, the water should be of such quality and quantity as to admit of bathing and swimming. The number "1000" may be substi- tuted for "200" in statement of coliform objectives.	MPN coliform bacterial content of a representa- tive number of samples should average less than 200 per 100 ml. and should not exceed this number in more than 20 percent of sam- ples examined in any month where associated with domestic sewage.	Same as for use "A" above.	None attributable to sewage, industrial wastes or other wastes which, after reasonable dilution and mixture, will inter- fere with the best use of these waters for the pur- pose indicated.	Greater than five (5) parts per million.	Same as for use "A" above.	Same as for use "A" above.	Less than twenty five (25) parts per billion residual amounts as to impart a residual taste to recreational or commercial fish or other aquatic forms	Same as for use "B" above.	Same as for use "A" above.	Same as for use "A" above.
(D) GROWTH AND PROPRO- TION OF FISH AND OTHER AQUATIC LIFE. Including waterfowl, fur- bearers, and other aquatic and semi-aquatic life.	See note under "C" above.	Same as for use "A" above.	None attributable to sewage, industrial wastes or other wastes which will interfere with the abili- ty or propagation of recreational or commercial fish or other edible aquatic forms.	Same as for use "C" above.	Same as for use "A" above.	None alone or in combination with other substances or wastes in sufficient amounts or of such character as to make receiving waters unsafe or unsuitable for use indicated.	Same as for use "C" above.	Same as for use "B" above	Not in sufficient quantity as to increase the temperature of the receiving water beyond that optimum for the normal aquatic life of the specific water.	Primary treatment and effective disinfection. Sewage lagoon treatment will meet this require- ment.
(E) AGRICULTURAL AND INDUSTRIAL WATER SUPPLY Without treatment except for the removal of nat- ural impurities to meet special quality require- ments other than those classified under "A" above. Note: Permissible limits for total concentration percent sodium, boron, chlorides, and sulphates to receive further study, suggested value for per- cent sodium is less than 100. Percent sodium com- puted as follows: Sodium to total cations expressed in equivalent weights. Calculated from the formula: $\frac{Na \times 100}{100 + Na + K + Ca + Mg}$ when Na, Ca, K, and Mg are expressed in equi- valents.	Same as for use "A" above.	Same as for use "A" above	None attributable to sewage, industrial wastes or other wastes which will adversely affect the mar- ketability of agricultural or industrial produce.	Greater than three (3) parts per million.	Hydrogen ion concentration expressed as pH should be maintained between 6.0 and 9.5	Same as for use "A" above.	None in suffi- cient quantity as to make rec- eiving water unsuitable for use indicated.	Same as for use "B" above	Same as for use "A" above.	Same as for use "B" above.

Water Quality Objectives of a watercourse will apply at the point of discharge of a wastewater in pollution cases where the sampling points will be determined by the Montana Water Pollution Council.

Determinations in the above table will be in accordance with "Standard Methods for the Examination of Water, Sewage and Industrial Wastes".

Adopted tentatively Feb. 28, 1956  
Revised April, 1958  
Revised Sept. 2, 1958





